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ABSTRACT

The state of second language acquisition research, particularly that which is classroom-oriented, is examined in a review of 50 empirical investigations undertaken over the last 25 years. The studies were analyzed according to the following dimensions: the environment in which the data were collected (classroom, naturalistic, simulated classroom, or laboratories); rationale of the research; research design and data collection; type of data collected (quantitative or qualitative); and type of analysis conducted (grammatical, statistical, and/or interpretive). It is concluded that while there have been considerable advances in the field, future research would benefit by incorporating: more contextualized (classroom-based rather than classroom-oriented) research; an extension of the theoretical bases of research agendas; extension of the range of research tools, techniques, and methods, adopting and adapting them where appropriate from content classroom research; re-evaluation of the distinction between process-oriented and product-oriented research; and a more active role for classroom practitioners in applied research. (MSE)

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SECOND LANGUAGE ACQUISITION RESEARCH IN THE LANGUAGE CLASSROOM

David Nunan

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SECOND LANGUAGE ACQUISITION RESEARCH IN THE LANGUAGE CLASSROOM

David Nunan

Abstract

The purpose of this paper is to take a critical look at the current state of SLA research, focusing in particular on research which is intended to provide directions for classroom teaching. The study is based on an analysis of 50 empirical investigations which have been carried out and reported in the literature over the last 25 years.

Introduction

Second language acquisition (SLA) refers to the ways in which any learner, child or adult learns a second or foreign language. The learning may take place in tutored or untutored environments, and in second or foreign language settings. The field of second language acquisition has undergone tremendous growth over the last twenty years. There are now journals devoted exclusively to the subject, and it is even possible to undertake Ph.D. programs in SLA.

SLA research is coming under increasing scrutiny by those involved in language pedagogy. Curriculum developers and materials writers are interested in insights which the research can provide into optimal sequencing orders for acquisition, while teachers are concerned with those pedagogic tasks which can best facilitate acquisition in the classroom.

For many language teachers, second language acquisition is synonymous with Krashen (1981, 1982) whose work contains strong claims of relevance to pedagogy. In recent years, however, this work has come under attack from a variety of sources. Perhaps the most trenchant (and, as yet, unanswered) critic is Gregg (1986) who, in a celebrated review wrote:

> There is a Monty Python review in which a radio interviewer tries to get Miss Ann Elk, a dinosaur expert, to explain her new theory about the brontosaurus. After a great deal of hemming and hawing, false starts and

> general time wasting, we are finally told this: Brontosauruses were very thin in the front, much, much thicker in the middle and then very thin again at the end. Most of us would agree that, as a theory, this is rather unsatisfactory (indeed, the interviewer shoots Miss Elk before she can tell us her second theory). But then it was not meant to be taken seriously as a theory.
>
> Reading The Input Hypothesis, which evidently is meant to be taken seriously, brings Miss Elk to mind. The Input Hypothesis is the latest in a series of books and articles in which Krashen pretty much repeats what he has said in all his other books and articles; that is, he offers 'what I call, perhaps audaciously, a theory of a second language acquisition' (p.vii). (There are perhaps more fitting words than 'audaciously'; and in fact Krashen usually drops the article and talks simply of second language acquisition theory, a location that makes the complex error of suggesting that his theory is a theory, that a second language theory exists, and that his theory is it.) (Gregg 1986: 116-7).

While many SLA researchers are cautious about deriving pedagogical implications from their research, others are not so coy. Given the controversies and disagreements among the researchers themselves, to what extent should the practitioner take these claims at their value? This question was one which preoccupied me to the point that, when I was invited to carry out a review of research for a special issue of *Studies in Second Language Acquisition*, I decided to use the question as my point of departure. I shall summarise this research later in the paper.

Background

In an important review of SLA research, Lightbown suggests that SLA studies "are designed to investigate questions about learners' use of their second language and processes which underly second language acquisition and use" (Lightbown 1985: 173). Her statement reflects a distinction which is commonly drawn between the product-oriented tradition in SLA research and the process-oriented tradition. The aim of product-oriented research is to describe and predict the stages through which learners pass in acquiring a second language. Process-oriented research, on the other hand, is aimed at identifying those pedagogic variables which may facilitate or impede acquisition.

The variables may relate to the learner, the teacher, the instructional treatment/environment or some form of interaction between these.

Questions which classroom SLA research seeks to address include the following:
What types of classroom organisation and grouping patterns facilitate second language development?
What task and activity types facilitate acquisition?
What are the characteristics of teacher talk (including questions, amount, error feedback, instructions, directions) and what are the implications of this talk for acquisition?
Does formal instruction make a difference to the rate and/or route of acquisition?
What affective variables correlate with second language achievement?
What type of input facilitates comprehension and, by implication, acquisition?
What interactional modifications facilitate comprehension and, by implication, acquisition?

One major strand of SLA research is that which has focused on similarities and differences between input and interaction inside and outside of the classroom. It has been observed that there are clear differences in both classroom and naturalistic settings in terms of patterns of interaction, language functions, types of teacher questions and so on. (See, for example, Pica 1983; Larsen-Freeman and Long, 1991 for a summary of similarities and differences between the two settings and the possible consequences of these for acquisition.) The implications of these differences, and the extent to which classroom interaction should resemble real life interaction, are still being debated (van Lier 1988).

Long (1983; 1986) has argued that there is no evidence in the SLA research literature that classroom instruction can alter the order in which learners acquire particular morphosyntactic feature of the target language, and in fact, all the evidence is to the contrary. However, his review of the literature suggests that formal instruction does seem to be advantageous in three areas. In the first instance, formal instruction can facilitate processes of acquisition. Focusing learners on form can help make target features salient. If instructed learners are compared with those picking up the language naturalistically, it is found that in the early stages of acquisition the instructed learners are, paradoxically, making more errors. In particular, they make 'oversuppliance' errors, inserting morphosyntactic items where they are not required, saying things such as 'He loving a dog' or 'The girls loves her dog'.

> Initially, it looks like a disaster for teachers that one of the effects of their work is that learners make new kinds of errors that even naturalistic learners don't make, but in the long run they seem to slide back down to the appropriate suppliance of these things over time. Whereas if you look at naturalistic learners much later in their development, they are still doing an awful lot of omission and deletion. So I think the processes are affected in a healthy way by formal instruction. (Long 1987:295)

In addition to facilitating acquisition processes, Long argues that instructed learners develop their skills much more quickly than uninstructed learners. Finally, in terms of ultimate attainment, it seems that instructed learners end up being much more proficient than those who do not receive formal instruction.

The Study

As I indicated at the beginning of this paper, I was recently invited to survey the current state of classroom-oriented research in second language acquisition. This study was carried out to subject to critical scrutiny some of the claims made in the literature. Fifty studies which purport to be relevant to teachers, curriculum developers and teachers were analysed according to five analytical dimensions. There were:

1. The environment in which the data were collected (Were they collected in classrooms, in naturalistic environments outside the classroom, in simulated settings, or in laboratories?)

2. The rationale of the research (Were the studies carried out principally to inform those concern with pedagogy?)

3. The research design and method of collection (Were the data collected through experiments or not? What methods were used?)

4. The type of data collected (Did the study yield quantitative or qualitative data?)

5 The type of analysis conducted (What grammatical, statistical, and interpretive analyses were carried out?)

Results

(For a detailed description and analysis of the survey, see *Studies in Second Language Acquisition*, 1991, 13, 2.)

Environment

The most surprising outcome of the survey was the fact that, of the fifty studies, only fifteen were actually carried out in language classrooms which were constituted for the purposes of teaching and learning rather than research. Twenty eight of the studies were carried out in laboratory, simulated or naturalistic environments, and seven studies were carried out in mixed environments (that is, some of the data were collected in classroom, and some in non-classroom environments.)

Design

Design refers to whether or not the data were collected through some form of experimentation or not. Not surprisingly, only two of the fifteen classroom-based studies utilised some form of experiment. Roughly half (thirteen of the twenty-eight) non-classroom studies involved an experiment, as did the studies carried out in 'mixed' environments (three out of the seven).

Method

There were eight methods used in the studies. These included observation, transcript, diary, elicitation, interview, introspection, questionnaire, and case study.

Elicitation was the most frequently employed data collection method, with exactly half of the studies using some form of elicitation procedure to obtain their data. Classified under this heading are studies which obtain their data by means of a stimulus, such as a picture, diagram, standardized test, etc. The use of such devices has been a feature of SLA research since the original morpheme order studies obtained data through the use of the Bilingual Syntax Measure. When evaluating research utilizing such devices, it is important to consider the extent to which the results obtained are an artifact of the elicitation devices employed (see,

for example, Nunan 1987 for a discussion on the dangers of deriving implications for SLA from standardised test data). One needs to be particularly cautious in making claims about acquisition orders, based on elicited data, as Ellis (1985) has pointed out. (See also, Eisenstein, Bailey and Madden, 1982).

'Observation' can be either focused or unfocused. Focused observation refers to studies in which the investigator looks for specific aspects of language and behaviour, usually with the assistance of an observational instrument for classifying the behaviour being investigated. From the tables, it can be seen that while non-classroom investigations tended to utilise some form of elicitation, classroom studies were more likely to utilise observation or transcript analysis. ('Transcripts' refers to the analysis of interactions which are not subjected initially to some form of categorisation, but which undergo interpretative analysis later.)

'Questionnaires' are defined as instruments in which prespecified information is collected from informants through either written or oral responses. Questionnaires can be either closed or relatively open-ended. A closed questionnaire solicits data which can be readily quantified (e.g. those which require subjects to circle the appropriate response), while an open questionnaire enables subjects to provide a free-form response. Constructing questionnaires which unambiguously elicit accurate responses is difficult, and questionnaires designed to obtain information about language learning have the additional complication of sometimes being mediated through the learner's first language.

Interviews can also be relatively closed or open-ended. According to their purpose, they may be conducted either in the learner's first or target language.

The term 'diary' is used as a form of shorthand to refer to written, discursive accounts of teaching or learning, and which therefore contain free-form accounts of the learning/teaching process. They may be kept by learners, teachers or outside researcher/observer.

The use of introspective methods has a long history in cognitive psychology (see, for example, the use of verbal reports and protocol analysis in Ericsson and Simon 1980; 1984), but has only recently made its appearance in second language research. The emerging status of the method is reviewed in Faerch and Kasper (1987).

From the study it was found that questionnaires, interviews, diaries and introspection are infrequently used in classroom-oriented SLA research. This may reflect the suspicion with which SLA researchers view introspective and self-report data.

Type of Data

Initially, it had been intended to classify the studies according to the type of data collected. However, it was found that virtually all of the studies were based on qualitative data as defined by Grotjahn, being either discursive (e.g. transcripts) or nominal (e.g. functional categories, observation schemes etc.) This analysis therefore did not add anything particularly useful or insightful and was discarded. (In the event, it may have been better to use the common-sense notion of numericality to define 'quantitative' rather Grotjahn's more stringent notion of whether or not the data are measured on an interval scale.)

Type of Analysis

Three types of analysis, linguistic, statistical and interpretative were conducted, and the results of this analysis are set out in Tables 1, 2 and 3.

Table 1
Classroom-based Studies: Type of Analysis

Linguistic	Functions	5
	Complexity	4
	Morphosyntax	3
	Suprasegmentals	1
	Lexis	1
Statistical	Correlation	2
	Chi square	2
	t-test	1
	U test	1
Interpretive		9

Table 2
Laboratory, simulated and naturalistic studies: Type of Analysis

Linguistic	Morphosyntax	9
	Functions	8
	Complexity	2
	Quantity	2
Statistical	Correlation	7
	Chi square	5
	t-test	6
	Factor analysis	2
	F-ratio	2
	Cronbach's alpha	2
	ANOVA	2
	ANCOVA	1
Interpretive		6

Table 3
Mixed studies: Type of Analysis

Linguistic		6
	Morphosyntax	2
Statistical	Chi square	3
	t-test	2
	Correlation	1
Interpretive		3

Not surprisingly, classroom studies tend to be more interpretative and make a more limited use of statistics than non-classroom studies. This reinforces the picture which emerged in relation to the design and methods issues already discussed. It should be pointed out that the notion of 'interpretative analysis' is a relativistic one. All studies, even those employing a true experimental design and

utilising inferential statistics contain some form of interpretative analysis, even if this is little more than a footnote to the discussion of research outcomes.

In their analysis of statistical tests in applied linguistics, Teleni and Baldauf (1988) classify techniques as either basic, intermediate or advanced. Basic techniques include descriptive statistics, Pearson product-moment coefficient, Chi square, independent *t* - test, dependent *t* - test and one-way ANOVA. Applying their scheme to the studies analysed here, we see that the great majority of studies (29 out of 39) employ basic statistical tools. Many of the studies analysed in this review can be criticised on their research designs. There are also deficiencies in the manner in which they are reported. This is particularly true of experimental studies and those employing statistical analysis. Basic information, such as the number of subjects and whether or not they were randomised are frequently either not reported or buried away in the body of the report. There are also studies which violate assumptions underlying the statistical procedures employed. One particular problem is the analysis of group means through *t* - tests or ANOVA when the size is far too small for the analysis to be valid. (See also Chaudron 1988 for the critique of the use of statistics in classroom research.)

Discussion

What conclusions can we draw from this study? I believe that there are five points which need to be considered by SLA researchers who are motivated by a desire to provide directions for teachers, curriculum developers and materials writers. In the first instance, I believe there is a need for more contextualised research. Secondly, there needs to be an extension to the theoretical bases of the research agendas. Thirdly, it would be highly desirable to extend the range of research tools, techniques and methods, in particular, adopting methods which have proved to be valuable in content classroom research. While accepting the salience of the distinction between process and product-oriented research, I believe that this distinction needs to be re-evaluated. Finally, I would call for a more active role for the classroom practitioner in applied research, both through engagement with mainstream researchers in collaborative research projects, and also through action based investigations in their own professional contexts.

From the data, it can be argued that we need far more classroom-based, as opposed to classroom-oriented research. Further, we need research which investigates linguistic behaviour in context. Notwithstanding Labov's observer's

paradox, this means investigating real behaviour in real classrooms. van Lier puts the case for contextualised research in the following way:

> [Classroom] interaction consists of actions - verbal and otherwise - which are interdependent, i.e. they influence and are influenced by other actions. Pulling any one action, or a selection of them, out of this interdependence for the purposes of studying them, complicates rather than facilitates their description, just as a handshake cannot be adequately described, let alone adequately understood, by considering the actions of the two persons involved separately. ... [He goes on to say] The L2 classroom can be defined as the gathering, for a given period of time, of two or more persons (one of whom generally assumes the role of instructor) for the purposes of language learning. This is the setting of classroom research, the place where the data are found. I have argued before that, for CR to be possible, this setting must be intact, and not expressly set up for the purposes of research. [For van Lier] the central question that L2 classroom research addresses can be expressed as follows: How to identify, describe and relate, in intersubjective terms, actions and contributions of participants in the L2 classroom, in such a way what their significance for language learning can be understood.
>
> (van Lier 1988: 47)

Extending the theoretical bases of the research

I believe that there is some justification in extending the theoretical bases upon which much of the research rests. Many of the studies in this survey derive their theoretical rationale from transformational-generative grammar (although this is often more by implication than explicit acknowledgement.) The work of Krashen, particularly the 'comprehensible input hypothesis', has also been influential, although, once again, this is not always explicitly acknowledged.

In particular, it is worth looking to the development of a research agenda utilising alternative forms of analysis, such as that provided by systemic linguistics (Halliday 1985). Research based on systemic-functional grammar has provided rich insights into the development of oral and written language in first language classrooms. For example, it has demonstrated the value of explicit instruction in the generic structure of texts for the mastery of different types of written texts (see, for example, Christie 1985; Hammond 1990). Most of this work has been carried out

in first language classrooms, and it is worth extending this to second language contexts. (There is some evidence that this is in fact beginning to happen. See, for example, Mohan, forthcoming).

Extending the range of research tools, techniques and methods

There is also a need to extend the range of research tools, techniques and methods, adopting and adapting these where appropriate from content classroom research. (See Nunan 1989 for techniques, such as verbal protocols, stimulated recall and seating chart observation records, and for examples of their use in exploring language classrooms.) Allied to this is the desirability of using more than one instrument to obtain multiple perspectives on the phenomena under investigation. From the data presented in Tables 1, 2 and 3, it can be seen that only a handful of studies utilised more than two instruments.

One particularly underutilised method is the case study which, while it is associated in mainstream educational research with ethnographic research (see, for example, Barlett, Kemmis and Gillard, 1982), is a research 'hybrid' in that it can utilize data from a range of sources. In fact, a great deal of research in content classrooms is of this type. (The classic classroom-based case study is Smith and Geoffrey 1968, which drew data from a variety of sources, but principally from participant observation, non-participant observation, introspection and diaries.) The use of single case research of the type used extensively in speech pathology and human communication disorders is also worth looking at. In addition, as Larsen-Freeman and Long point out, there is no reason why SLA research might not utilize methods from either end of the methodological spectrum. They argue that longitudinal, naturalistic investigations could be supplemented by elicitation data.

A study utilizing such a hybrid approach is reported in Spada (1990). This investigation sought to determine (a) how different teachers interpreted theories of communicative language teaching in terms of their classroom practice, and (b) whether different classroom practices had any effect on learning outcomes. Three teachers and their intermediate "communicatively-based" ESL classes were used in the study. Each class was observed for five hours a day, once a week, over a six-week period. Students were given a battery of pre- and post-tests including the Comprehensive English Language Test and the Michigan Test of English Language Proficiency. The study utilized the COLT observation scheme as well as a qualitative analysis of classroom activity types. This indicated that one of the

classes, Class A, differed from the other two in a number of ways. The qualitative analysis confirmed the class differences, showing, for example, that class A spent twice as much time on form-based work than class C and triple the time spent by class B. To investigate whether these differences contributed differently to the learners L2 proficiency, pre- and post-treatment test scores were compared in an analysis of covariance. Among other things, results indicated that groups B and C improved their listening significantly more than group A, despite the fact that class A spent considerably more time in listening practice than the other classes. This research demonstrates the fact that qualitative observation and analysis were needed in order to interpret the quantitative results.

One of the persistent issues associated with research methods and paradigms concerns the status of knowledge. Despite observations on the complementarity of qualitative and quantitative research, there is a view that scientific 'truth' is arrived at through objective, value-free observation and inexorable logic. Medawar, in his provocative treatise on the scientific method, has this to say:

> ...we have been brought up to believe that scientific discovery turns upon the use of a method analogous to and of the same logical stature as deduction, namely the method of Induction - a logically mechanised process of thought which, starting from simple declarations of fact arising out of the evidence of the senses, can lead us with certainty to the truth of general laws. This would be an intellectually disabling belief if anyone actually believed it, and it is one for which John Stuart Mill's methodology of science must take most of the blame. The chief weakness of Milian induction was its failure to distinguish between the acts of mind involved in discovery and in proof. ... If we abandon the idea of induction and draw a clear distinction between having an idea and testing it or trying it out - it is as simple as that, though it can be put more grandly - then the antitheses I have been discussing fade away.
>
> (Medawar 1984: 31)

In the introduction to this paper, I suggested that research traditions were value neutral, that the issue or question should dictate the appropriate procedure. However, it may well be that a more basic, philosophical orientation will dictate which questions one considers worth asking in the first place.

Process-oriented versus product-oriented research

A commonly drawn distinction has been drawn between process- and product-oriented classroom research. Process-oriented studies focus on input and interaction, while product studies focus on the outcomes of instructional treatment. The great majority of studies in this survey were process-oriented, looking at such things as the negotiation of meaning prompted by different types of classroom task (see, for example, Doughty and Pica, 1986; Brock, 1986; Nunan, 1987a), and the comprehensibility of input as measured by standardised comprehension measures (see, for example, Chaudron and Richards 1986). Process-product studies which look at language gains which result from various forms of input were much less prominent in the data.

Most process-oriented studies are predicated on hypothesised relationships between various forms of input/interaction and acquisition and do not attempt to measure language gains. Doughty and Pica (1986), for example, established that two-way information gap tasks prompted significantly more modified interaction than one-way information gap tasks, and that small group tasks prompted significantly more modified interaction than teacher fronted tasks. From this they argue that group work:

> ...is eminently capable of providing students with opportunities to produce the target language and to modify interaction. In keeping with second language acquisition theory, such modified interaction is claimed to make input comprehensible to learners and to lead ultimately to successful classroom second language acquisition.
>
> (Doughty and Pica 1986: 322)

This type of research does not demonstrate (nor was it intended to demonstrate) a relationship between modified interaction and language gains. The hypothesised relationship is predicated on the assumption that the existence of interactional modifications ensures that the interaction is proceeding at a level which maximises the potential for comprehensible input.

Similarly, the studies by Brock (1986) and Nunan (1987a) indicate that the use of referential rather than display questions by teachers stimulate the production of longer and more complex responses by learners. However, they do not demonstrate that this actually fuels the acquisition process. (Long and Crookes 1986 did establish a link between the use of referential questions and experiential content

gains. However, the results did not reach statistical significance.) The study by Spada (1990), and other studies by some of Spada's colleagues in Canada are among the few to attempt to establish process-product links.

In addition, it can be argued that many of these so called process oriented studies are nothing of the sort, that in fact process is treated as product: instances of negotiation, wait time, foreigner talk etc., are bundled together and counted, the inference being the bigger the bundle the better! (van Lier personal communication).

Genuine process studies are difficult to find, although they are beginning to appear more frequently in the literature. One such study is that by Freeman (forthcoming). Freeman began with the question: How does the teacher define what can or cannot go on in her teaching - how are the boundaries of possibility constructed and negotiated through the talk and activity of the teacher's work? During the course of the investigation the focus shifted, and the question became "How are authority and control distributed, through pedagogy and interaction, to build a shared understanding of the subject in question (in this instance French as a foreign language)?

Freeman became a participant observer in a French as a foreign language classroom, and his data base included lesson transcripts, field notes and interviews with the teacher and students. The analysis consists of discursive and interpretive work on the data base. Freeman concludes from his investigation that:

> The process of evolving shared understanding of what to learn and how to learn it is at the heart of what makes [the teacher's] classes work. It takes place against the backdrop of constant social interaction ... and is intimately tied to sharing authority and control. [The teacher] has been able to make public the process of creating and internalizing the language precisely because she allows the talk and activity in her class to be largely self-regulated. Students come to control themselves in their interactions; that control goes hand-in-hand with authority over the language. Both involve the responsibility to an inner sense of rightness for appropriate behaviour and for accurate language use. This responsibility is individual and collective. [The teacher] is a resource for the language and a source for criteria and explanations of correctness. Likewise she is the source of activity in the classroom and a resource for successful accomplishment of that activity.

Freeman's study is a valuable addition to the literature on several counts. It highlights social and interpersonal aspects of language learning which are often randomised out of the language learning equation. It is also an example of a genuine process study. In addition, the shift in focus which occurred during the course of the investigation reflected an interaction between data and analysis, an interaction which is not untypical of qualitative research (Kirk and Miller 1986), but which would be considered 'unscientific' within a strict psychometric paradigm. Finally, the very questions it poses differ considerably from those generally posed by SLA research.

A role for the teacher in classroom research

Finally, I should like to suggest that teachers themselves become more actively involved in the research process. The development of skills in observing and documenting classroom action and interaction, particularly if these foster the adoption of a research orientation by teachers to their classrooms, provides a powerful impetus to professional self-renewal. This is exemplified in the action research programs described in Nunan (1989). Such an orientation implies a particular role for the teacher. It is inconsistent with either the teacher as passive recipient of someone else's curriculum, or the notion of teaching as technology. the teacher researcher is one who is involved in the critical appraisal of ideas and the informed application of those ideas in the classroom. It is also at odds with the 'methods' approach to language teaching with its constant search for the one best way. The teacher researcher is less concerned with a search for the one best method than with the exploration of a number of variables in a range of classrooms with a diversity of learner types. Such exploration may, in fact, reveal that the complex mix of elements and processes results in variable outcomes and that what works in one classroom with a particular group of learners may not be as successful in a different classroom with different learner types.

While such exploration and analysis might add to our basic knowledge of language learning, such an ideal need not necessarily be the only or even the primary rationale for teacher research. It may be more realistic for teachers to recreate and test against the reality of their own classrooms claims for published research. The research literature which is surveyed in this study is a rich source of ideas on issues, methods and approaches, and many of these studies can stimulate the teacher to ask 'what might happen in my particular classrooms with my particular learners as a result of a particular intervention? While not wishing to

denigrate the value of the scientific method, nor to discount the care which many researchers take to guard against threats to internal and external validity, it is worth bearing in mind Cronbach's comment that, "When we give proper weight to local conditions, any generalization is a working hypothesis, not a conclusion". (1975: 125)

Conclusion

In this paper, I have taken a critical look at the current state of SLA research. While there have been considerable advances in the field, both methodological and substantive, there is room for improvement, and I have tried to indicate, in general terms, where these improvements might be made. In particular, I have suggested that future research would benefit from the informed incorporation into their design and execution of the following five key points:

1. The implementation of more contextualised research: that is, classroom-based, as opposed to classroom-oriented, research.

2. An extension of the theoretical bases of research agendas.

3. An extension of the range of research tool, techniques and methods, adopting and adapting these where appropriate from content classroom research.

4. A re-evaluation of the distinction between process-oriented and product-oriented research.

5. A more active role for classroom practitioners in applied research.

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